



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jesse Wolfe et al

Attorney Docket No. : IL-11072

Serial No. : 10603556

Art Unit:

Filed : 8/18/2003

Examiner:

For : Process and Apparatus for Pulsed DC Magnetron Reactive Sputtering
of Thin Film coatings on Large Substrates Using Smaller Sputter
Cathodes

Commissioner for Patents
Alexandria, VA 22313-1450

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2. Form PTO-1449
Six (6) US Patents; Eight (8) Non Patent Literature Documents
3. Return Postcard

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jesse Wolfe et al

Docket No. IL-11072

Customer No: 24981

Serial No. :

Art Unit :

Filed : 8/18/2003

Examiner :

For : Process and Apparatus for Pulsed DC Magnetron
Reactive Sputtering of Thin Film Coatings on Large
Substrates Using Smaller Sputter Cathodes

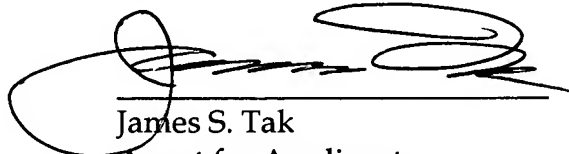
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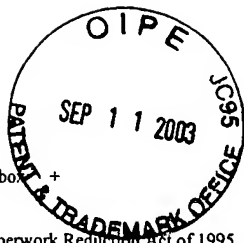
Forwarded herewith is an Information Disclosure Statement, Form-1449, in
the above-identified application. Copy of the cited reference is enclosed.

Respectfully submitted,


James S. Tak
Agent for Applicants
Registration No. 46,367

Dated: 9-9-03

Enclosure:
As noted above



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PTO/SB/08A (08-00)

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		Application Number	
		Filing Date	8/18/2003
		First Named Inventor	Jesse Wolfe et al
		Group Art Unit	
		Examiner Name	
Sheet 1 of 2	Attorney Docket Number	IL-11072	

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document Number	Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5798027		Lefebvre et al	8/25/1998	
		5702573		Biberger et al	12/30/1997	
		5225057		Lefebvre et al	7/6/1993	
		5346600		Nieh et al	7/13/1994	
		5618388		Seeser et al	4/8/1997	
		5851365		Michael Scobey	12/22/1998	

FOREIGN PATENT DOCUMENTS

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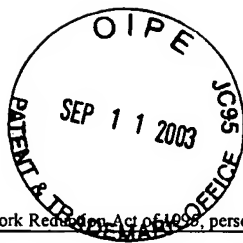
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Group Art Unit	
Examiner Name	
Attorney Docket Number	IL-11072

Sheet 2 of 2

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		
		Broughton J.N. et al	Long Throw Sputter Deposition of Titanium at Low Pressures	1995 VMIC Conference June 27-29 1995 ISMIC – 104/95/0201 (pages 201-203)
		Rossnagel S. M. et al	Sputter Deposition for Semiconductor Manufacturing	IBM Journal of Research and Development Volume 43, ½ 1999 Plasma Processing (pages 1-14)
		Nam-Woong Paik et al	The characterization of a New Plasma-Magnetron-Sputter-Type Negative Ion Source	Presented to the Journal of Applied Physics – Pre-print of a journal (4 pages)
		Bradley J.W. et al	Time-Resolved Langmuir Probe Measurements at the Substrate Position in a Pulsed Mid-frequency DC Magnetron Plasma	Elsevier Surface & Coatings Technology 135 2001 (pages 221-228)
		L.B. Jonsson et al	Frequency response in pulsed DC reactive sputtering processes	Elsevier Thin Solid Films 365 (2000) 43-48
		A.A. Mayo et al	Across-wafer nonuniformity of long throw sputter deposition	American Vacuum Society J. Vac Sci Technol. B 15(5) Sep/Oct 1997
		A. Belkind et al	Electrical Dynamics of Pulsed Plasmas	1998 Society of Vacuum Coaters 505 pages 321-326
		D. Carter et al	Parameter Optimization in Pulsed DC Reactive Sputter Deposition of Aluminum Oxide	2002 Society of Vacuum Coaters 45 th Annual Technical Conference Proceedings pages 570-577

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